# APPLICABLE BUILDING CODES

1. VA DEPARTMENT OF VETERANS AFFAIRS (VA) FIRE PROTECTION DESIGN MANUAL, SIXTH EDITION SEPTEMBER 2011 INTERNATIONAL BUILDING CODE - 2012 3. NFPA 101 LIFE SAFETY CODE (LSC) - 2012 PORTABLE FIRE EXTINGUÍSHER — 2013 INSTALLATION OF SPRINKLER SYSTEMS - 2013 6. NFPA 70 NATIONAL ELECTRICAL CODE - 2014 7. NFPA 72 NATIONAL FIRE ALARM CODE - 2013 8. NFPA 90A INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS - 2012 9. NFPA 5000 BUILDING CONSTRUCTION AND SAFETY - 2012

## USE GROUP/OCCUPANCY

PER THE IBC: GROUP I-2, A-3 AND B. PER THE LSC: AMBULATORY HEALTH CARE, ASSEMBLY AND BUSINESS.

FIRE PROTECTION SYSTEMS:

FULLY SPRINKLERED - WET PIPE SPRINKLER SYSTEM ANALOG/ADDRESSABLE FIRE ALARM SYSTEM WITH VOICE COMMUNICATION

CONSTRUCTION TYPE:

PER IBC TYPE IB TYPE II 222 PER NFPA 101/NFPA 5000 ALLOWABLE HEIGHT AND AREA:

BASED ON I-2 USE GROUP, MIXED UNSEPARATED USES

BASIC ALLOWABLE STORIES/HEIGHT: 4 / 160 FT. INCREASE FOR AUTOMATIC SPRINKLERS (IBC 504.2) 5 / 180 FT.

UNLIMITED

ACTUAL HEIGHT AND AREA:

HEIGHT 3 STORY AREA 75,000 SQ. FT.

FIRE RESISTANCE RATINGS FOR BUILDING ELEMENTS: (IBC TABLE 601)

IBC USED FOR BUILDING FIRE RESISTANCE RATINGS AS NFPA 101 DOES NOT HAVE SPECIFIC HEIGHT/AREA CRITERIA FOR AMBULATORY HEALTHCARE FACILITIES IN CHAPTER 20

IBC TYPE IB BUILDING ELEMENT STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES BEARING WALLS, INTÉRIOR AND EXTERIOR NON-BEARING WALLS, INTERIOR AND EXTERIOR FLOOR CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS

### SEPARATIONS FOR AMBULATORY HEALTHCARE AREAS

- 1. EVERY STORY SHALL BE DIVIDED INTO NOT LESS THAN TWO SMOKE COMPARTMENTS THAT SHALL NOT EXCEED AN AREA OF 22,500 FT2 AND THE TRAVEL DISTANCE FROM ANY POINT TO REACH A DOOR IN A SMOKE BARRIER SHALL NOT EXCEED 200 FT.
- 2. REQUIRED SMOKE BARRIERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LSC SECTION
- 8.5 AND SHALL HAVE A MINIMUM 1-HOUR FIRE RESISTANCE RATING. 3. SMOKE DAMPERS SHALL NOT BE REQUIRED IN DUCT PENETRATIONS OF REQUIRED SMOKE BARRIERS IN FULLY DUCTED HVAC SYSTEMS FOR BUILDINGS PROTECTED WITH AN AUTOMATIC SPRINKLER SYSTEM.

OCCUPANCY	REQUIRED BARRIER	CODE REFERENCE
WASTE & LINEN COLLECTION ROOMS > 100	SEPARATION 1 HOUR	IBC TABLE 508.2.5
STORAGE ROOMS	SMOKE PARTITION	LSC 38.3.2.1 & 8.7.1.1

EXTERIOR FIRE-RESISTANCE RATING BASED ON FIRE SEPARATION DISTANCE FOR TYPE IB CONSTRUCTION:

FIRE SEPARATION DISTANCE = X (FEET)	REQUIRED FIRE RESISTANCE RATING (HOURS)
X < 5	1
5 <u>&lt;</u> X < 10	1
10 <u>&lt;</u> X < 30	1
X > 30	0

### MEANS OF EGRESS

MEANS OF EGRESS SHALL COMPLY WITH THE LSC. EGRESS FROM THE UPPER LEVEL OF THE BUILDING DOES NOT REQUIRE BUILDING OCCUPANTS TO PASS THROUGH THE OCCUPIED AREAS OF THE FIRST FLOOR LEVEL. THE EXISTING MAIN CORRIDORS AND EXITS SHALL BE RETAINED WITHOUT ALTERATION AS SUCH IT IS ANTICIPATED THAT THE MEANS OF EGRESS WILL CONTINUE TO COMPLY WITH NFPA 101 REQUIREMENTS.

## OCCUPANT LOAD

AREA/USE	OCCUPANT LOAD FACTOR
ANLAY OSL	(SQ FT/PER PERSON)
AMBULATORY HEALTH CARE	100 GROSS
STORAGE AREAS	500 GROSS
BUSINESS USE	100 GROSS
ASSEMBLY USE	15 NET

		T		1
AREA/USE	FLOOR	APPROXIMATE AREA (SQ. FT.)	OCCUPANT LOAD FACTOR (SQ. FT/PERSON)	OCCUPANT LOAD (PERSONS)
EXISTING WEST AMBULATORY HC AREA	SECOND	3,852	100	112
AMBULATORY HC ADDITION	SECOND	25,716	100	257
TERRACE	SECOND	748	15	50
CONFERENCE ROOM	SECOND	436	15	29
TOTALS SECON	ND FLOOR	30,752	_	375
EXISTING AREA	THIRD	1,275	100	13
BUSINESS ASSEMBLY	THIRD	1,179	15	79
ADDITION BUSINESS	THIRD	8,717	100	87
TAOTONIESONTHIRI	) FLOOR	11,171	_	179

# NUMBER OF EXITS

OCCUPANT LOAD < 500 PERSONS OCCUPANT LOAD > 500 PERSONS AND < 1,000 PERSONS	MINIMUM 2 EXITS MINIMUM 3 EXITS
CAPACITY OF EXITS (LSC 7.3)	
FOR LEVEL COMPONENTS AND RAMPS FOR VERTICAL COMPONENTS	0.2 IN./PERSON 0.3 IN./PERSON

### EXIT REQUIREMENTS

SECOND FLOOR OCCUPANT LOAD 325 PERSONS REQUIRED NUMBER OF EXITS MINIMUM 2 PROVIDED NUMBER OF EXITS PROVIDED EXIT CAPACITY 500 PERSONS

THIRD FLOOR

OCCUPANT LOAD 179 PERSONS REQUIRED NUMBER OF EXITS MINIMUM 2 PROVIDED NUMBER OF EXITS PROVIDED EXIT CAPACITY 290 PERSONS

# TRAVEL DISTANCE LIMITS

	TRAVEL	COMMON PATH OF	DEAD END (ET)
OCCUPANCY	DISTANCE (FT)	TRAVEL (FT)	DEAD-END (FT)
AMBULATORY	200	100	50
HEALTHCARE	200	100	30
ASSEMBLY	250	20/75°	20
RUSINESS	300	100	50

D0311123 | 300 | 100 | 30 <sup>a</sup> 20FT FOR COMMON PATH SERVING >50 PERSONS, 75FT FOR COMMON PATH SERVING <50 PERSONS. NR: NO REQUIREMENT

# INTERIOR FINISH

OCCUPANCY	EXITS	EXIT ACCESS CORRIDORS	OTHER SPACES
AMBULATORY HEALTHCARE	A, B OR C	A, B OR C	A, B OR C
BUSINESS	A, B OR C	A, B OR C	A, B OR C
ASSEMBLY	A OR B	A, B OR C	A, B OR C
NOTE: AUTOMATIC	SPRINKLER PROT	TECTION ALLOWANCES	HAVE BEEN APPLIED

FLOOR FINISH - NO CRITICAL RADIANT FLUX RATING IS REQUIRED FOR FULLY SPRINKLERED BUILDINGS [LSC 38.3.3.3.2 &10.2.8.2].

### ADDITIONAL LIFE SAFETY FEATURES

FIRE EXTINGUISHERS ARE REQUIRED IN THE AMBULATORY HEALTHCARE OCCUPANCY AREAS PER NFPA 101 20.3.5.3.

ALL EXISTING FIRE EXTINGUISHERS SHALL BE RETAINED AND THEIR SPACING AND LOCATION SHALL BE CONFIRMED TO COMPLY WITH NFPA 10 REQUIREMENTS.

MEANS OF EGRESS ILLUMINATION MUST COMPLY WITH LSC 7.8. MEANS OF EGRESS ILLUMINATION IS REQUIRED FOR CORRIDORS AND EXIT DISCHARGE PER LSC 20.2.8. EMERGENCY LIGHTING IS REQUIRED PER 20.2.9 AND 7.9. THE EMERGENCY LIGHTING SYSTEM IS REQUIRED TO PROVIDE CONTINUOUS ILLUMINATION FOR A DURATION OF NOT LESS THAN 90 MINUTES IN CASE OF EMERGENCY OR PRIMARY POWER LOSS [LSC 7.9.2.1 AND 7.9.2.2].

MEANS OF EGRESS ARE REQUIRED TO BE PROVIDED WITH EXIT SIGNAGE IN ACCORDANCE WITH LSC 7.10 AND 20.2.9. INTERNALLY ILLUMINATED SIGNS MUST BE LIGHT-EMITTING DIODE (LED) TYPE, ELECTROLUMINESCENCE (LEC), OR COLD CATHODE

# FIRE AND SMOKE DAMPERS

FIRE DAMPERS ARE REQUIRED FOR FULLY DUCTED HVAC SYSTEMS WHERE AIR DUCTS PENETRATE OR TERMINATE AT OPENINGS IN WALLS REQUIRED TO HAVE A FIRE RESISTANCE RATING OF 2-HOURS OR MORE. (NFPA 90A 5.3.1)

FIRE DAMPERS SHALL BE INSTALLED AT EACH POINT A FLOOR IS PENETRATED OR THE AIR DUCT SHALL BE ENCLOSED BY A SHAFT. (NFPA-90A 5.3.2.1)

SMOKE DAMPERS SHALL NOT BE REQUIRED IN DUCT PENETRATIONS OF 1-HOUR RATED SMOKE BARRIERS PROVIDED TO SEPARATE FLOOR INTO SMOKE COMPARTMENTS. (NFPA 101 20.3.7.6)

FIRE DAMPERS ARE NOT REQUIRED IN DUCT FOR PENETRATIONS OF THE INTERSTITIAL DECK. (VA; 2.3.F)

### LEGEND SMOKE PARTITION 1-HOUR FIRE-RATED/SMOKE BARRIER WALL 2-HOUR FIRE-RATED WALL 2-HOUR FIRE-RATED/SMOKE BARRIER WALL 7/XX\ EGRESS CAPACITY REQUIRED (PERSONS) EGRESS CAPACITY PROVIDED (PERSONS) AREA (SQ. FT.) OCCUPANT LOAD (SQ. FT./PERSON) OCCUPANTS (PERSONS) XX FIRE EXTINGUISHER CABINET 2-1/2" HOSE VALVE CABINET CP = XX FT\_\_\_ COMMON PATH OF TRAVEL

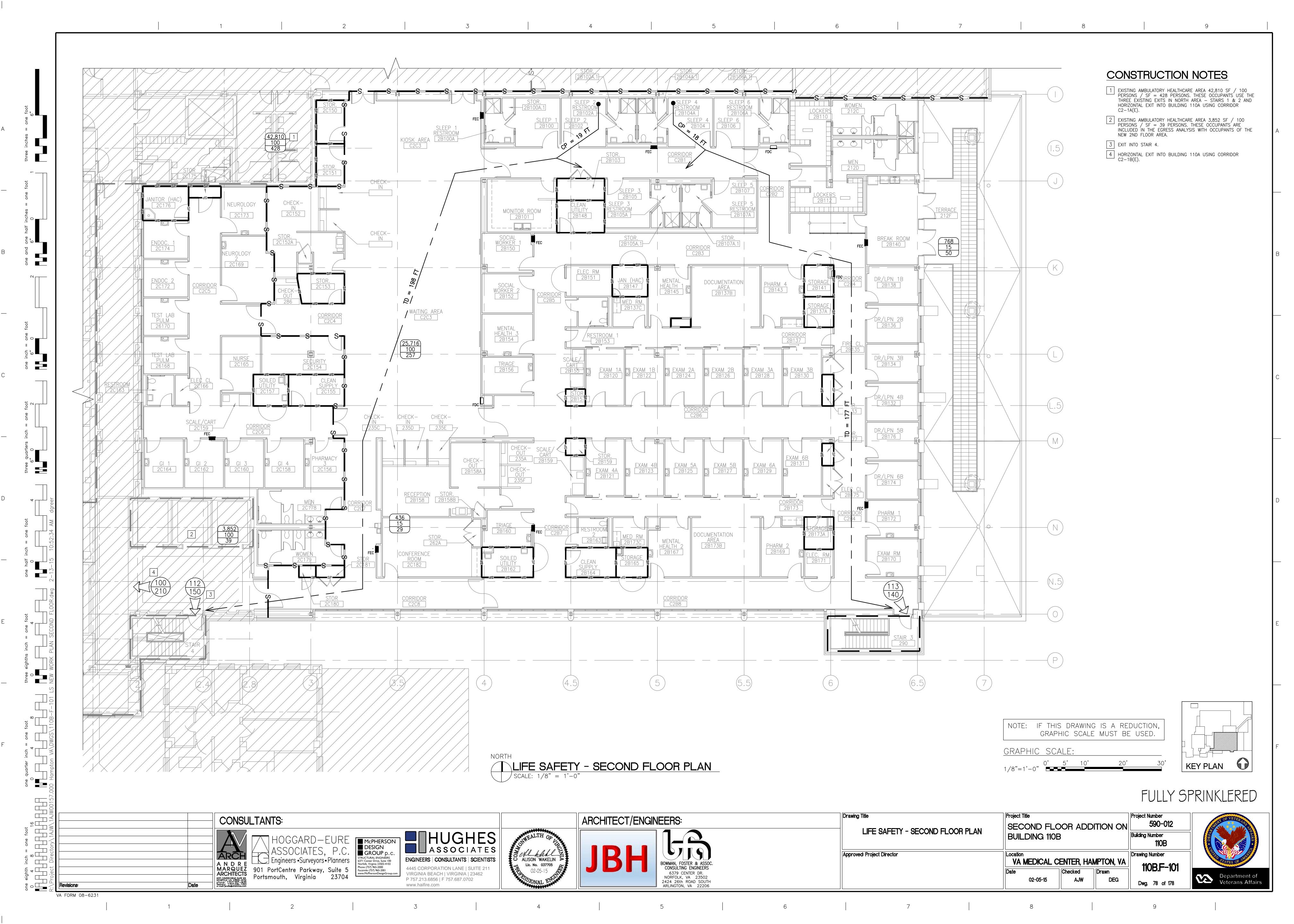
LINETYPE FOR EXISTING FIRE—RATED WALL/SMOKE BARRIER

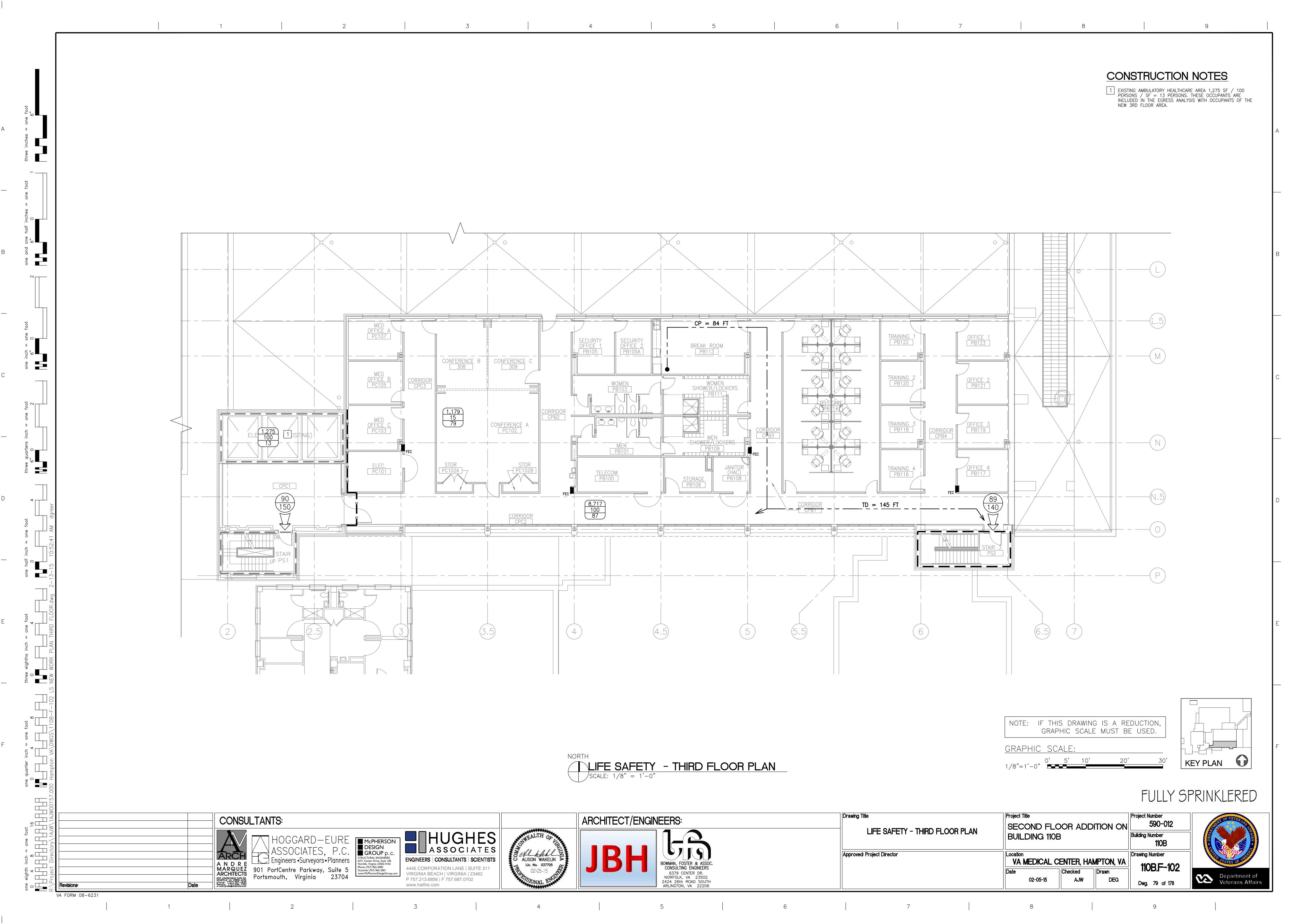
LINETYPE FOR NEW FIRE-RATED WALL/SMOKE BARRIER

\_ TD = XX FT \_\_\_\_\_ TRAVEL DISTANCE

# FULLY SPRINKLERED

Drawing Title Project Title Project Number ARCHITECT/ENGINEERS: CONSULTANTS: SECOND FLOOR ADDITION ON LIFE SAFETY - GENERAL NOTES HUGHES **BUILDING 110B** Building Number ALISON WAKELIN GROUP p. STRUCTURAL ENGINEERS Approved: Project Director Drawing Number Engineers •Surveyors • Planners ENGINEERS | CONSULTANTS | SCIENTISTS VA MEDICAL CENTER, HAMPTON, VA BOWMAN, FOSTER & ASSOC.
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2424 26th ROAD SOUTH
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### FIRE ALARM GENERAL NOTES

GENERAL SCOPE — MODIFY EXISTING FIRE ALARM SYSTEM. PROVIDE NEW EST3 REMOTE FLOOR PANEL. CONNECT ALL NEW DEVICES TO THIS PANEL. REMOTE FLOOR PANEL SHALL CONNECT TO EXISTING REMOTE PANEL IN SECOND FLOOR BUILDING 110A. FOR STROBE SYNCHRONIZATION EXTEND SLC CIRCUIT FROM FIRE ALARM PANELS IN GD131.

1. <u>APPLICABLE CODES</u>:

NFPA 72

DEPARTMENT OF VETERANS AFFAIRS (VA) FIRE PROTECTION DESIGN MANUAL, SIXTH EDITION, ISSUED SEPTEMBER 2011.

NATIONAL FIRE ALARM CODE, 2013 EDITION.

NFPA 70 NATIONAL ELECTRIC CODE, 2014 EDITION.

NFPA 101 LIFE SAFETY CODE, 2012 EDITION.

- 2. REFER TO SPECIFICATION 283100 FOR ADDITIONAL INFORMATION. IF A CONFLICT OCCURS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- 3. <u>NOTIFICATION</u>: PROVIDE PUBLIC MODE GENERAL EVACUATION OF THE ENTIRE BUILDING IN ACCORDANCE WITH NFPA 72 AND VA.

AUDIBLE SIGNAL SHALL CONFORM TO ANSI S3.41 AUDIBLE EMERGENCY EVACUATION SIGNAL (I.E., TEMPORAL THREE PATTERN) [VA 7.3.F.1].

AUDIBLE NOTIFICATION SHALL BE ACCOMPLISHED USING A DIGITAL VOICE SPEAKER SYSTEM [VA 7.3.B].

SOUND PRESSURE LEVEL FROM AUDIBLE ALARM APPLIANCES SHALL NOT EXCEED 110 DBA IN ANY OCCUPIED AREA [NFPA 72 7.4.1.2].

- 4. ALL NEW CONDUIT AND BACK BOXES SHALL BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED.
- 5. ALL CIRCUIT WIRING SHALL BE CLASS B.
- 6. ALL SYSTEM POWER AND GROUND CIRCUITS SHALL BE TYPE "THHN" SOLID COPPER SIZED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND THE APPLICABLE CODES AND BE INSTALLED IN EMT TYPE CONDUIT.
- 7. ALL WIRING, CABLES, BOXES, TROUGHS AND OTHER RELATED EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
- 8. SECONDARY POWER SUPPLY SHALL BE VIA DEDICATED FIRE ALARM BATTERIES CAPABLE OF OPERATING THE SYSTEM ON STANDBY FOR 24 HOURS FOLLOWED BY 5 MINUTES WITH THE SYSTEM AT FULL CAPACITY [NFPA 72 4.4.1.5.3.1]. CHARGING AND METERING SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72.
- 9. PERFORM TESTING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND NFPA 72.
- 10. INCLUDE THE SYSTEM WIRING, RACEWAYS, PULL BOXES, TERMINAL CABINETS, OUTLET AND MOUNTING BOXES, CONTROL EQUIPMENT, ALARM, AND SUPERVISORY SIGNAL INITIATING DEVICES, ALARM NOTIFICATION APPLIANCES, AND OTHER ACCESSORIES AND MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE OPERATING SYSTEM EVEN THOUGH EACH ITEM IS NOT SPECIFICALLY MENTIONED OR DESCRIBED. PROVIDE SYSTEM(S) COMPLETE AND READY FOR OPERATION.
- 11. PROVIDE EQUIPMENT MATERIALS, INSTALLATION, WORKMANSHIP, INSPECTION, AND TESTING IN STRICT ACCORDANCE WITH THE REQUIRED AND ADVISORY PROVISIONS OF NFPA 72, ISO 7240-16. IEC 60268-16, EXCEPT AS MODIFIED HEREIN. THE SYSTEM LAYOUT ON THE DRAWINGS SHOWS THE INTENT OF COVERAGE AND DEVICE/APPLIANCES ARE SHOWN IN SUGGESTED LOCATIONS. SUBMIT SHOP DRAWINGS SHOWING DEVICE LOCATIONS, TERMINAL CABINET LOCATIONS, JUNCTION BOXES, OTHER RELATED EQUIPMENT, CONDUIT ROUTING, WIRE COUNTS, CIRCUIT IDENTIFICATION IN EACH CONDUIT, AND CIRCUIT LAYOUTS FOR ALL FLOORS. DRAWINGS SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 170. FINAL QUALITY, SYSTEM LAYOUT, AND COORDINATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.

### FIRE ALARM INSTALLATION NOTES

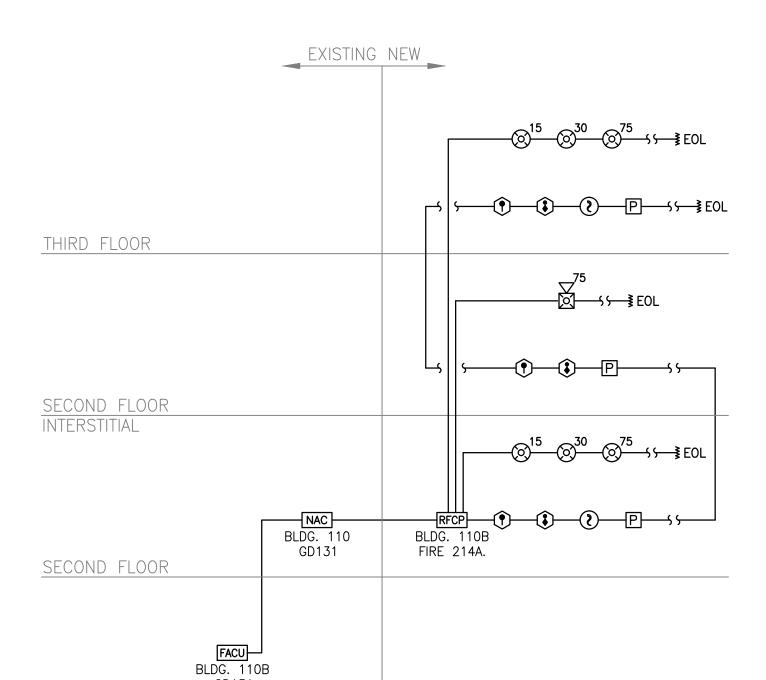
VA FORM 08-623

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- 2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL PARTS, MATERIALS AND PROGRAMMING TO MAINTAIN SYSTEM OPERABILITY.
- 3. NEW DEVICES INSTALLED BUT NOT IN SERVICE SHALL BE TAGGED "NOT IN SERVICE." UPON ACCEPTANCE OF NEW FIRE FIRE ALARM SYSTEM TAGS SHALL BE REMOVED.

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FIRE ALARM INPUT  MANUAL PULL STATION			The state of the s			STATE OF THE STATE		
SMOKE DETECTOR	•	•			•			•
DUCT DETECTOR			•		•	•	•	
AUTOMATIC SPRINKLER SYSTEM FLOW SWITCH	•	•			•			•
AUTOMATIC SPRINKLER SYSTEM TAMPER SWITCH			•		•			
FACU CIRCUIT FAULT (OPEN, GROUND, SHORT)				•	•			
OTHER TROUBLE CONDITION				•	•			
PRIMARY AC POWER LOSS				•	•			

# FIRE ALARM INPUT-OUTPUT MATRIX

NO SCALE



NOTE: NOT ALL DEVICES ARE DEPICTED IN RISER DIAGRAM.
DEVICE SYMBOLS SHOWN ON THIS DIAGRAM REPRESENT
MULTIPLE TYPICAL DEVICES, APPLIANCES AND CIRCUITS.

### FIRE ALARM RISER

FIRST FLOOR

NO SCALE



(C5)

### LEGEND

- FACU FIRE ALARM CONTROL UNIT (EST3)
- RFCP EST-3 REMOTE FLOOR CONTROL PANEL
- MM MONITOR MODULE
- CM CONTROL MODULE
- NAC NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
- (2) SMOKE DETECTOR
- DUCT DETECTOR
- MANUAL PULL STATION
- 9 DOOR HOLD OPEN DEVICE
- CD WALL MOUNTED SPEAKER STROBE
- (SUPERSCRIPT INDICATES CANDELA RATING)
- © CEILING MOUNTED SPEAKER STROBE
  (SUPERSCRIPT INDICATES CANDELA RATING)
- (S) CEILING MOUNTED SPEAKER
- (3) FLOW SWITCH
- TAMPER SWITCH
- SLEEPING ROOM SMOKE DETECTOR WITH 177 CD STROBE
- SB AND SOUNDER BASE.
- SMOKE DETECTOR FOR DOOR HOLD OPEN RELEASE.

# FULLY SPRINKLERED

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0 4 8 16 Drawing Title Project Title Project Number CONSULTANTS: ARCHITECT/ENGINEERS: SECOND FLOOR ADDITION ON FIRE ALARM - GENERAL NOTES HUGHES **BUILDING 110B** Building Number ALISON WAKELIN GROUP p Approved: Project Director Drawing Number Engineers •Surveyors´•Planners VA MEDICAL CENTER, HAMPTON, VA Lic. No. 037705 110B.FA001 901 PortCentre Parkway, Suite 5 6379 CENTER DR.
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2424 26th ROAD SOUTH
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# FIRE ALARM GENERAL NOTES

GENERAL SCOPE — MODIFY EXISTING FIRE ALARM SYSTEM. PROVIDE NEW EST3 REMOTE FLOOR PANEL. CONNECT ALL NEW DEVICES TO THIS PANEL. REMOTE FLOOR PANEL SHALL CONNECT TO EXISTING REMOTE PANEL IN SECOND FLOOR BUILDING 110A. FOR STROBE SYNCHRONIZATION EXTEND SLC CIRCUIT FROM FIRE ALARM PANELS IN GD131.

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- 2. REFER TO SPECIFICATION 283100 FOR ADDITIONAL INFORMATION. IF A CONFLICT OCCURS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- 3. <u>NOTIFICATION</u>: PROVIDE PUBLIC MODE GENERAL EVACUATION OF THE ENTIRE BUILDING IN ACCORDANCE WITH NFPA 72 AND VA.

AUDIBLE SIGNAL SHALL CONFORM TO ANSI S3.41 AUDIBLE EMERGENCY EVACUATION SIGNAL (I.E., TEMPORAL THREE PATTERN) [VA 7.3.F.1].

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- 4. ALL NEW CONDUIT AND BACK BOXES SHALL BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED.
- 5. ALL CIRCUIT WIRING SHALL BE CLASS B.
- 6. ALL SYSTEM POWER AND GROUND CIRCUITS SHALL BE TYPE "THHN" SOLID COPPER SIZED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND THE APPLICABLE CODES AND BE INSTALLED IN EMT TYPE CONDUIT.
- 7. ALL WIRING, CABLES, BOXES, TROUGHS AND OTHER RELATED EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
- 8. SECONDARY POWER SUPPLY SHALL BE VIA DEDICATED FIRE ALARM BATTERIES CAPABLE OF OPERATING THE SYSTEM ON STANDBY FOR 24 HOURS FOLLOWED BY 5 MINUTES WITH THE SYSTEM AT FULL CAPACITY [NFPA 72 4.4.1.5.3.1]. CHARGING AND METERING SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72.
- 9. PERFORM TESTING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND NFPA 72.
- 10. INCLUDE THE SYSTEM WIRING, RACEWAYS, PULL BOXES, TERMINAL CABINETS, OUTLET AND MOUNTING BOXES, CONTROL EQUIPMENT, ALARM, AND SUPERVISORY SIGNAL INITIATING DEVICES, ALARM NOTIFICATION APPLIANCES, AND OTHER ACCESSORIES AND MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE OPERATING SYSTEM EVEN THOUGH EACH ITEM IS NOT SPECIFICALLY MENTIONED OR DESCRIBED. PROVIDE SYSTEM(S) COMPLETE AND READY FOR OPERATION.
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### FIRE ALARM INSTALLATION NOTES

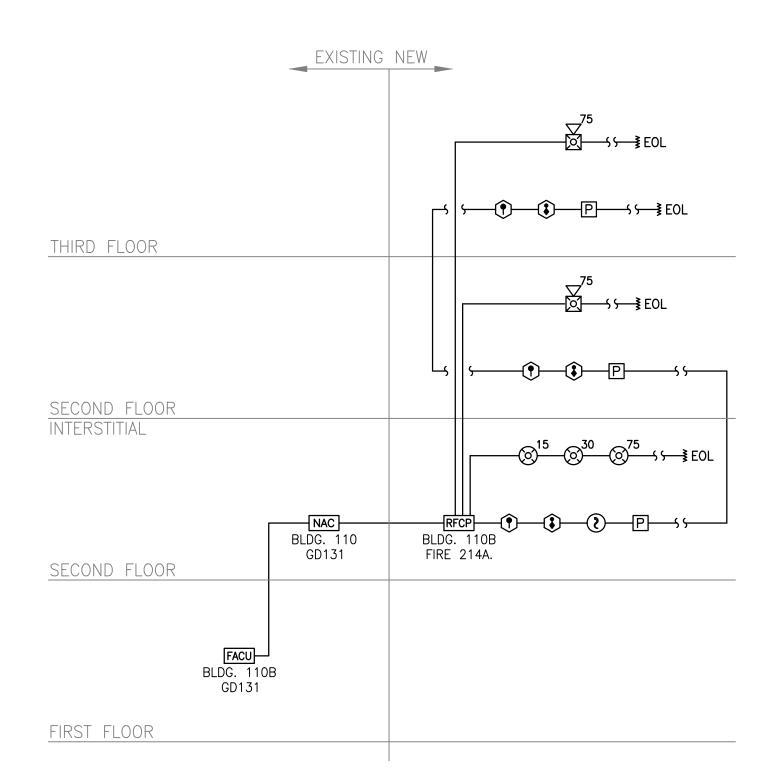
VA FORM 08-623

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FIRE ALARM INPUT	7			80), V		
MANUAL PULL STATION	•	•		•		•
SMOKE DETECTOR	•	•		•		•
DUCT DETECTOR			•	•	• •	
AUTOMATIC SPRINKLER SYSTEM FLOW SWITCH	•	•		•		•
AUTOMATIC SPRINKLER SYSTEM TAMPER SWITCH			•	•		
FACU CIRCUIT FAULT (OPEN, GROUND, SHORT)			•	•		
OTHER TROUBLE CONDITION			•	•		
PRIMARY AC POWER LOSS						

# FIRE ALARM INPUT-OUTPUT MATRIX

NO SCALE



NOTE: NOT ALL DEVICES ARE DEPICTED IN RISER DIAGRAM.
DEVICE SYMBOLS SHOWN ON THIS DIAGRAM REPRESENT
MULTIPLE TYPICAL DEVICES, APPLIANCES AND CIRCUITS.

# FIRE ALARM RISER - BID DEDUCT #1

NO SCALE



(C5)

### LEGEND

- FACU FIRE ALARM CONTROL UNIT (EST3)
- RFCP EST-3 REMOTE FLOOR CONTROL PANEL
- MM MONITOR MODULE
- CM CONTROL MODULE
- NAC NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
- SMOKE DETECTOR
- DUCT DETECTOR
- P MANUAL PULL STATION
- P DOOR HOLD OPEN DEVICE
- CD WALL MOUNTED SPEAKER STROBE
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FULLY SPRINKLERED

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0 4 8 16 Project Title Drawing Title Project Number CONSULTANTS: ARCHITECT/ENGINEERS: FIRE ALARM - GENERAL NOTES - BID SECOND FLOOR ADDITION ON HUGHES DEDUCT #1 **BUILDING 110B** Building Number ALISON WAKELIN GROUP p. Approved: Project Director Drawing Number Engineers •Surveyors´•Planners VA MEDICAL CENTER, HAMPTON, VA Lic. No. 037705 110B.FA002 CONSULTING ENGINEERS
6379 CENTER DR.
NORFOLK, VA 23502
2424 26th ROAD SOUTH
ARLINGTON, VA 22206 901 PortCentre Parkway, Suite 5 Checked VIRGINIA BEACH | VIRGINIA | 23462 Portsmouth, Virginia Department of Veterans Affairs P 757.213.6856 | F 757.687.0702 DEG AJW Dwg. 81 of 178 www.haifire.com

### FIRE ALARM GENERAL NOTES

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5. ALL CIRCUIT WIRING SHALL BE CLASS B.

- 6. ALL SYSTEM POWER AND GROUND CIRCUITS SHALL BE TYPE "THHN" SOLID COPPER SIZED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND THE APPLICABLE CODES AND BE INSTALLED IN EMT TYPE CONDUIT.
- 7. ALL WIRING, CABLES, BOXES, TROUGHS AND OTHER RELATED EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
- 8. SECONDARY POWER SUPPLY SHALL BE VIA DEDICATED FIRE ALARM BATTERIES CAPABLE OF OPERATING THE SYSTEM ON STANDBY FOR 24 HOURS FOLLOWED BY 5 MINUTES WITH THE SYSTEM AT FULL CAPACITY [NFPA 72 4.4.1.5.3.1]. CHARGING AND METERING SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72.
- 9. PERFORM TESTING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND NFPA 72.
- 10. INCLUDE THE SYSTEM WIRING, RACEWAYS, PULL BOXES, TERMINAL CABINETS, OUTLET AND MOUNTING BOXES, CONTROL EQUIPMENT, ALARM, AND SUPERVISORY SIGNAL INITIATING DEVICES, ALARM NOTIFICATION APPLIANCES, AND OTHER ACCESSORIES AND MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE OPERATING SYSTEM EVEN THOUGH EACH ITEM IS NOT SPECIFICALLY MENTIONED OR DESCRIBED. PROVIDE SYSTEM(S) COMPLETE AND READY FOR OPERATION.
- 11. PROVIDE EQUIPMENT MATERIALS, INSTALLATION, WORKMANSHIP, INSPECTION, AND TESTING IN STRICT ACCORDANCE WITH THE REQUIRED AND ADVISORY PROVISIONS OF NFPA 72, ISO 7240-16. IEC 60268-16, EXCEPT AS MODIFIED HEREIN. THE SYSTEM LAYOUT ON THE DRAWINGS SHOWS THE INTENT OF COVERAGE AND DEVICE/APPLIANCES ARE SHOWN IN SUGGESTED LOCATIONS. SUBMIT SHOP DRAWINGS SHOWING DEVICE LOCATIONS, TERMINAL CABINET LOCATIONS, JUNCTION BOXES, OTHER RELATED EQUIPMENT, CONDUIT ROUTING, WIRE COUNTS, CIRCUIT IDENTIFICATION IN EACH CONDUIT, AND CIRCUIT LAYOUTS FOR ALL FLOORS. DRAWINGS SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 170. FINAL QUALITY, SYSTEM LAYOUT, AND COORDINATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.

### FIRE ALARM INSTALLATION NOTES

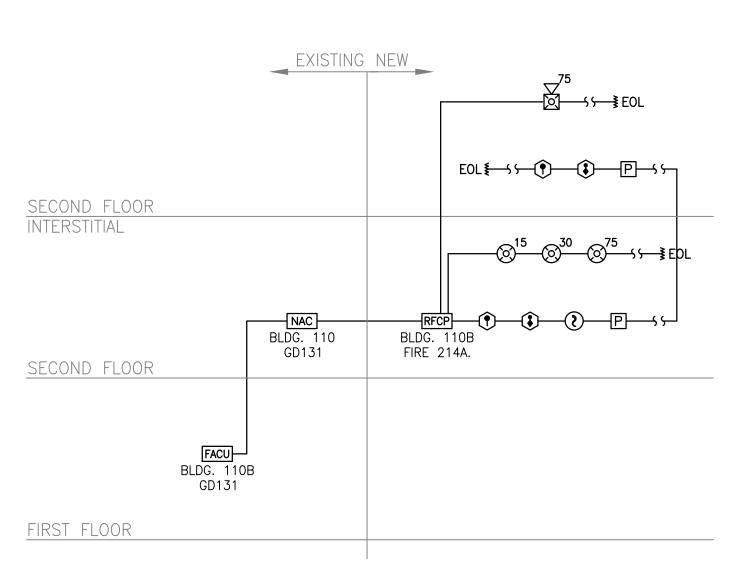
- 1. THE FIRE ALARM SYSTEM SHALL REMAIN ACTIVE THROUGHOUT THE PROJECT. EXISTING FIRE ALARM CIRCUITS AND DEVICES SHALL REMAIN UNTIL NEW FIRE ALARM SYSTEM IS ACCEPTED BY THE CONTRACTING OFFICER.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL PARTS, MATERIALS AND PROGRAMMING TO MAINTAIN SYSTEM OPERABILITY.
- 3. NEW DEVICES INSTALLED BUT NOT IN SERVICE SHALL BE TAGGED "NOT IN SERVICE." UPON ACCEPTANCE OF NEW FIRE FIRE ALARM SYSTEM TAGS SHALL BE REMOVED.

# FIRE ALARM INPUT MANUAL PULL STATION SMOKE DETECTOR DUCT DETECTOR AUTOMATIC SPRINKLER SYSTEM FLOW SWITCH AUTOMATIC SPRINKLER SYSTEM TAMPER SWITCH FACU CIRCUIT FAULT (OPEN, GROUND, SHORT) OTHER TROUBLE CONDITION PRIMARY AC POWER LOSS

# FIRE ALARM INPUT-OUTPUT MATRIX

NO SCALE





NOTE: NOT ALL DEVICES ARE DEPICTED IN RISER DIAGRAM. DEVICE SYMBOLS SHOWN ON THIS DIAGRAM REPRESENT MULTIPLE TYPICAL DEVICES, APPLIANCES AND CIRCUITS.

### FIRE ALARM RISER - BID DEDUCT #2

NO SCALE



### LEGEND

FACU FIRE ALARM CONTROL UNIT (EST3)

RFCP EST-3 REMOTE FLOOR CONTROL PANEL

MM MONITOR MODULE

CM CONTROL MODULE

NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL

SMOKE DETECTOR

(2) DUCT DETECTOR

MANUAL PULL STATION

CD WALL MOUNTED SPEAKER STROBE

(SUPERSCRIPT INDICATES CANDELA RATING)

CD CEILING MOUNTED SPEAKER STROBE (SUPERSCRIPT INDICATES CANDELA RATING)

© CEILING MOUNTED SPEAKER

FLOW SWITCH

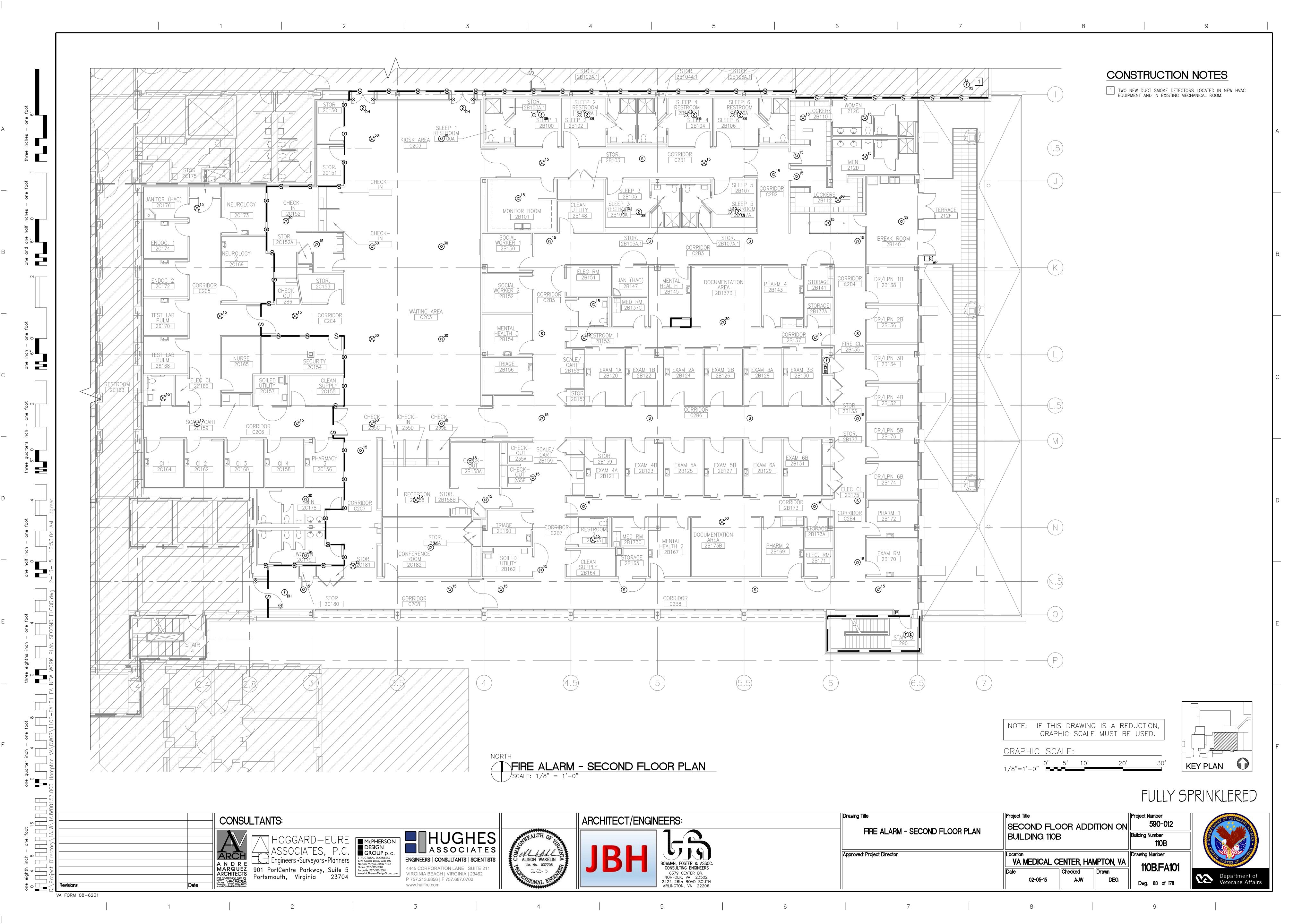
TAMPER SWITCH

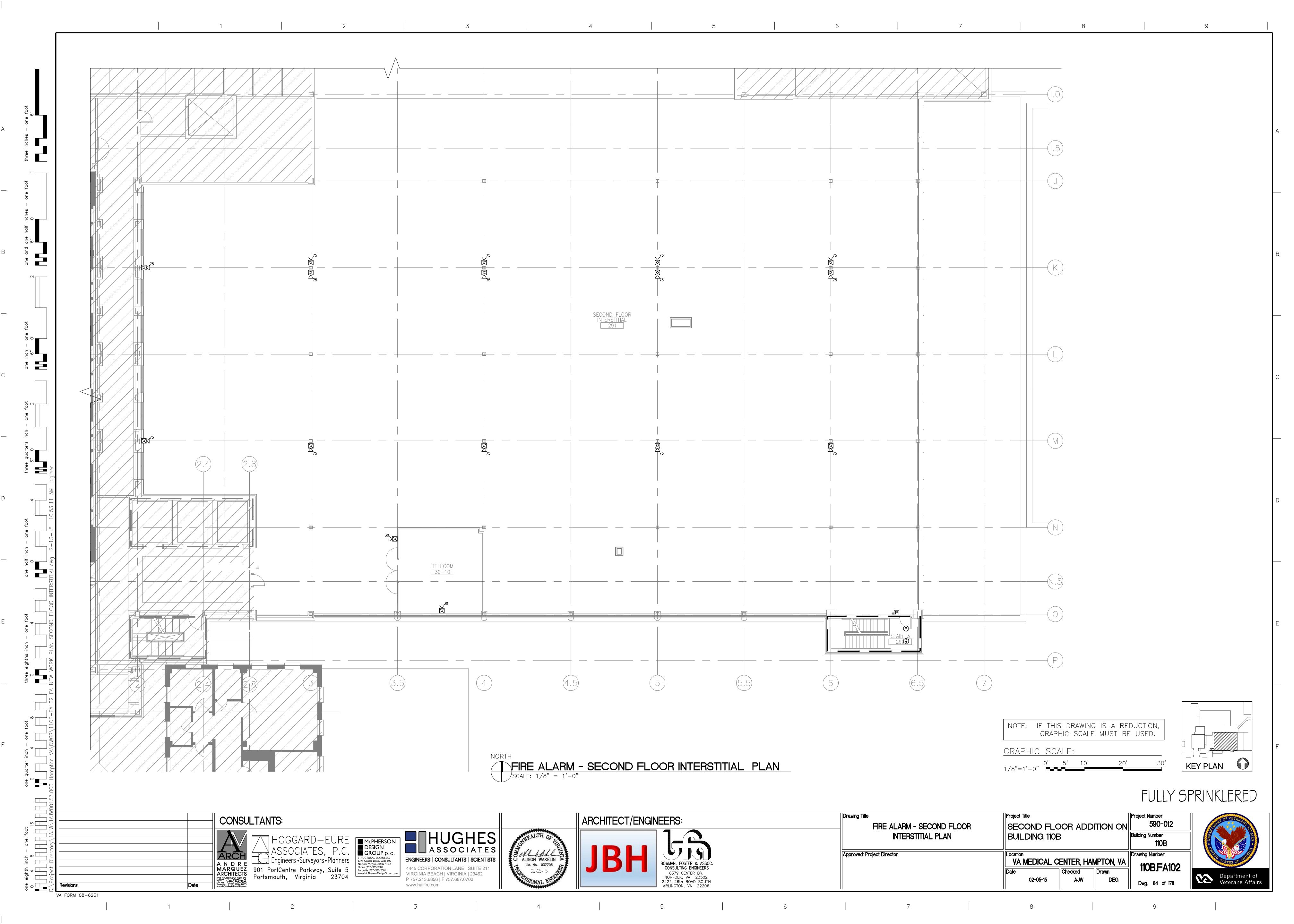
SLEEPING ROOM SMOKE DETECTOR WITH 177 CD STROBE SB AND SOUNDER BASE.

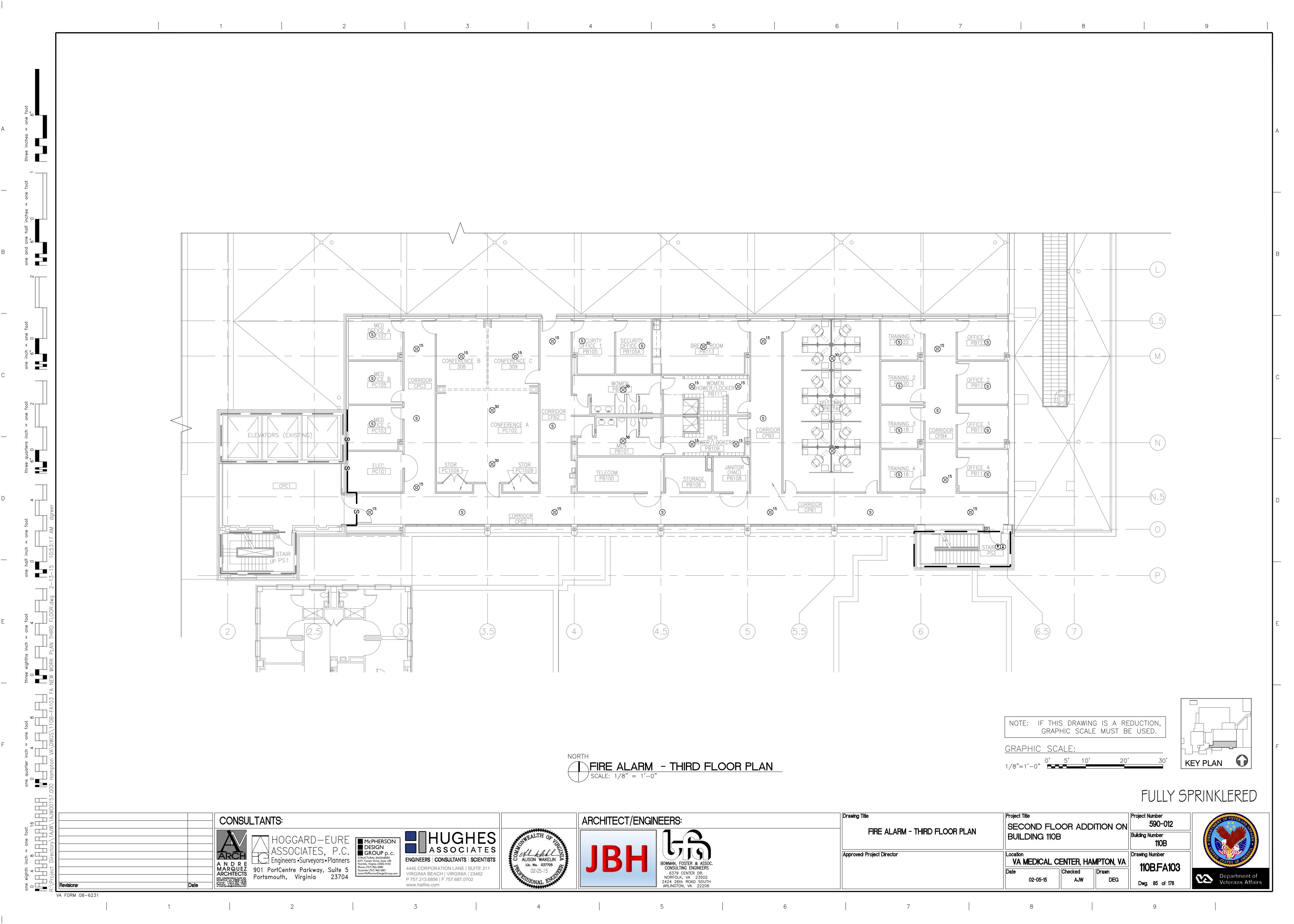
FULLY SPRINKLERED

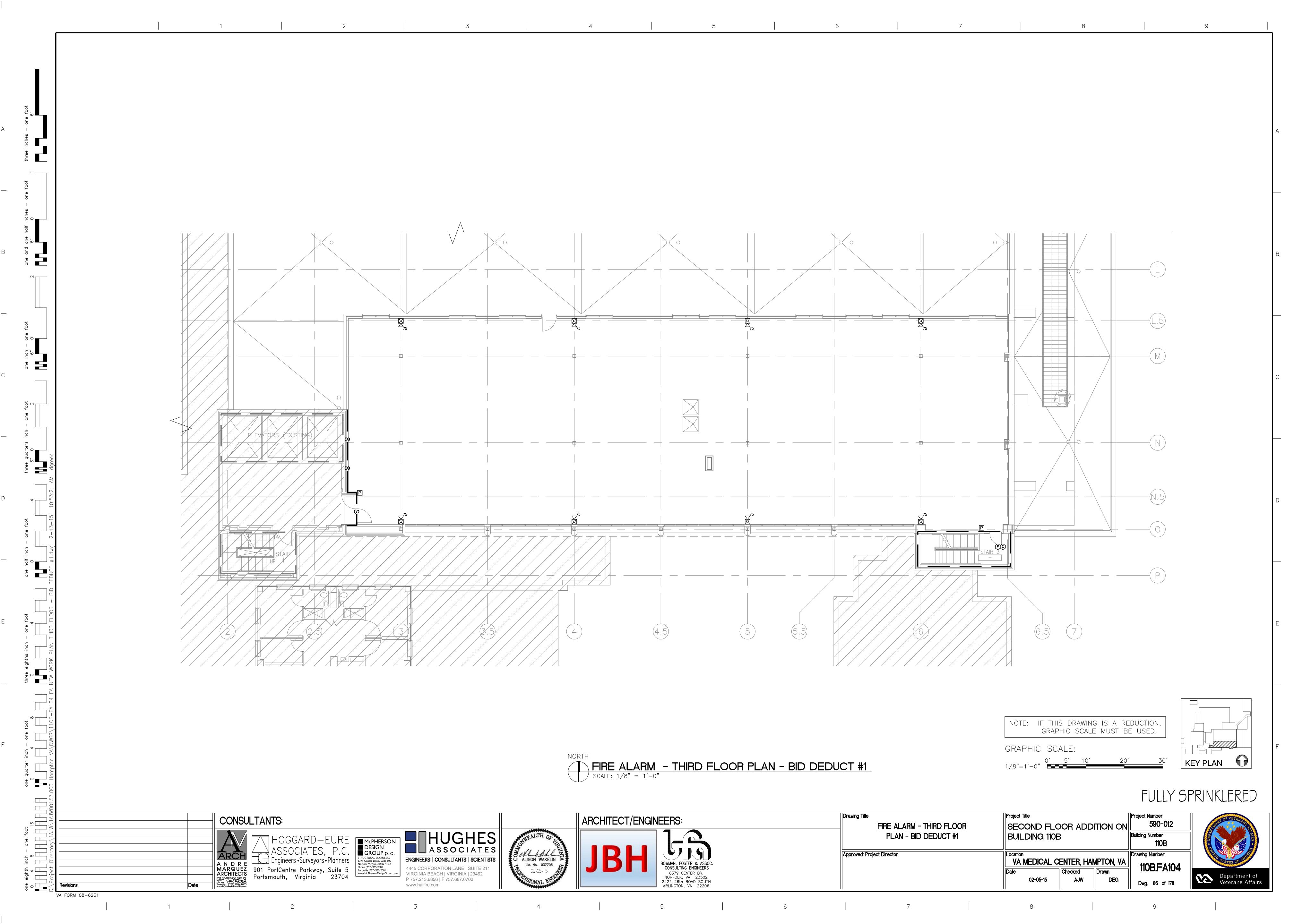
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0 4 8 16 Project Title Drawing Title Project Number ARCHITECT/ENGINEERS: CONSULTANTS: FIRE ALARM - GENERAL NOTES - BID SECOND FLOOR ADDITION ON HUGHES DEDUCT #2 **BUILDING 110B** Building Number ALISON WAKELIN **GROUP** p Approved: Project Director Drawing Number Engineers •Surveyors´•Planners VA MEDICAL CENTER, HAMPTON, VA Lic. No. 037705 110B.FA003 901 PortCentre Parkway, Suite 5 6379 CENTER DR.
NORFOLK, VA 23502
2424 26th ROAD SOUTH
ARLINGTON, VA 22206 Checked VIRGINIA BEACH | VIRGINIA | 23462 Portsmouth, Virginia Department of Veterans Affairs P 757.213.6856 | F 757.687.0702 DEG AJW Dwg. 82 of 178 www.haifire.com VA FORM 08-623









### FIRE SPRINKLER GENERAL NOTES

GENERAL SCOPE — ALTER EXISTING WET PIPE SPRINKLER PROTECTION IN ACCORDANCE WITH APPLICABLE CODES LISTED BELOW AND AS INDICATED ON CONTRACT DRAWINGS. PROVIDE COMPLETE SPRINKLER PROTECTION THROUGHOUT BUILDING ADDITIONS.

#### 1. <u>APPLICABLE CODES</u>:

VA DEPARTMENT OF VETERANS AFFAIRS FIRE PROTECTION DESIGN MANUAL, SIXTH EDITION, ISSUED SEPTEMBER 2011.

NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS, 2013 EDITION.

NFPA 101 LIFE SAFETY CODE, 2012 EDITION.

- 2. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION. IF A CONFLICT OCCURS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- 3. WET PIPE SPRINKLER PIPE SHALL BE U.L. LISTED BLACK STEEL, MINIMUM SCHEDULE 40 FOR ALL PIPE DIAMETERS EXCEPT WHERE A WATER QUALITY EVALUATION HAS BEEN DONE PERTAINING TO CORROSION. IF THE WATER QUALITY PERMITS, SCHEDULE 10 STEEL PIPING MAY BE USED FOR PIPE DIAMETERS NOMINALLY GREATER THAN 2 INCHES.
- 4. ALL AREAS ARE LIGHT HAZARD UNLESS OTHERWISE INDICATED ON CONTRACT DRAWINGS.
- 5. QUICK RESPONSE SPRINKLERS SHALL BE UTILIZED THROUGHOUT [VA 6.1.J].
- 6. PERFORM TESTING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND NFPA 13.
- 7. PROVIDE SIX SPARE SPRINKLERS OF EACH TYPE USED AND SPARE SPRINKLER CABINET AND REQUIRED WRENCHES. INSTALL IN APPROVED LOCATION.
- 8. SPRINKLER COVERAGE SHALL BE HYDRAULICALLY DESIGNED PER THE REQUIREMENTS OF NFPA 13 AND THE PROJECT SPECIFICATIONS. HYDRAULIC CALCULATIONS SHALL INCLUDE A 10% SAFETY MARGIN [VA 6.1.D]. WHERE CONFLICTING REQUIREMENTS EXIST, THE MORE STRINGENT SHALL APPLY.
- 9. IDENTIFICATION SIGNS SHALL BE PROVIDED ON CEILINGS OR AREAS WHERE SPRINKLER CONTROL VALVES, SECTIONAL VALVES, INSPECTOR TEST VALVES, TAMPER VALVES, AND ALL OTHER RELATED SPRINKLER COMPONENTS ARE CONCEALED FROM VIEW.
- 10. AVAILABLE WATER SUPPLY DATA IS AS FOLLOWS:

  TEST PERFORMED 6/22/2014 BY VA

  FLOW HYDRANT #30: 882.5 GPM

  RESIDUAL HYDRANT #32: 55 PSI STATIC, 40 PSI RESIDUAL

  FLOW HYDRANT #34: 746 GPM

  RESIDUAL HYDRANT #33: 55 PSI STATIC, 40 PSI RESIDUAL
- 11. THESE DRAWINGS DEMONSTRATE THE CONFIGURATION OF MAJOR SYSTEM COMPONENTS. THEY ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO SHOW EXACT LOCATIONS. PIPE LENGTHS AND ELEVATIONS INDICATED ON THE DRAWINGS (IF SHOWN) ARE APPROXIMATE. COORDINATE FINAL INSTALLATION WITH ACTUAL FIELD CONDITIONS AND OTHER CONSTRUCTION TRADES.
- 12. RUN SPRINKLER PIPING TIGHT TO THE CEILING.

## LEGEND

VA FORM 08-623

----- SPRINKLER PIPE

⊗
SPRINKLER STANDPIPE RISER WITH HOSE VALVE

SPRINKLER DRAIN

RECESSED SPRINKLER

O UPRIGHT SPRINKLER

FCA FLOOR CONTROL ASSEMBLY

# OCCUPANCY HAZARD LEGEND

ALL AREAS ARE LIGHT HAZARD UNLESS NOTED OTHERWISE. A MINIMUM DENSITY OF 0.10 GPM/SQ.FT. WITH A DESIGN AREA OF 1,500 SQ.FT. AND A HOSE ALLOWANCE OF 100 GPM SHALL BE USED.

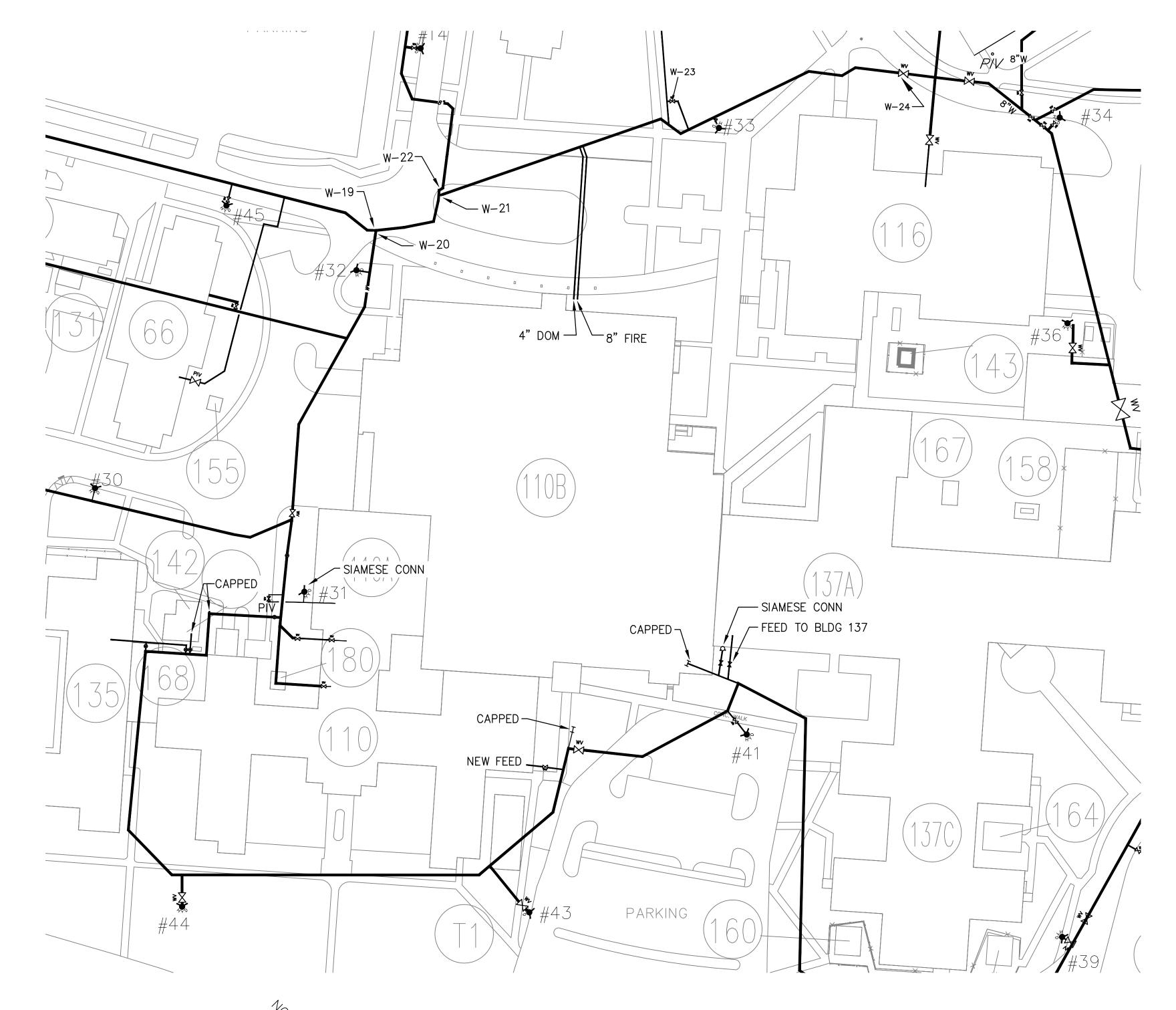
ORDINARY HAZARD GROUP 1 OCCUPANCY. A MINIMUM

DENSITY OF 0.15 GPM/SQ.FT. WITH A DESIGN AREA OF 1,500 SQ.FT. AND A HOSE ALLOWANCE OF 250 GPM SHALL BE USED.

ORDINARY HAZARD GROUP 2 OCCUPANCY. A MINIMUM

DENSITY OF 0.20 GPM/SQ.FT. WITH A DESIGN AREA OF 1,500 SQ.FT. AND A HOSE ALLOWANCE OF 250 GPM SHALL BE USED.

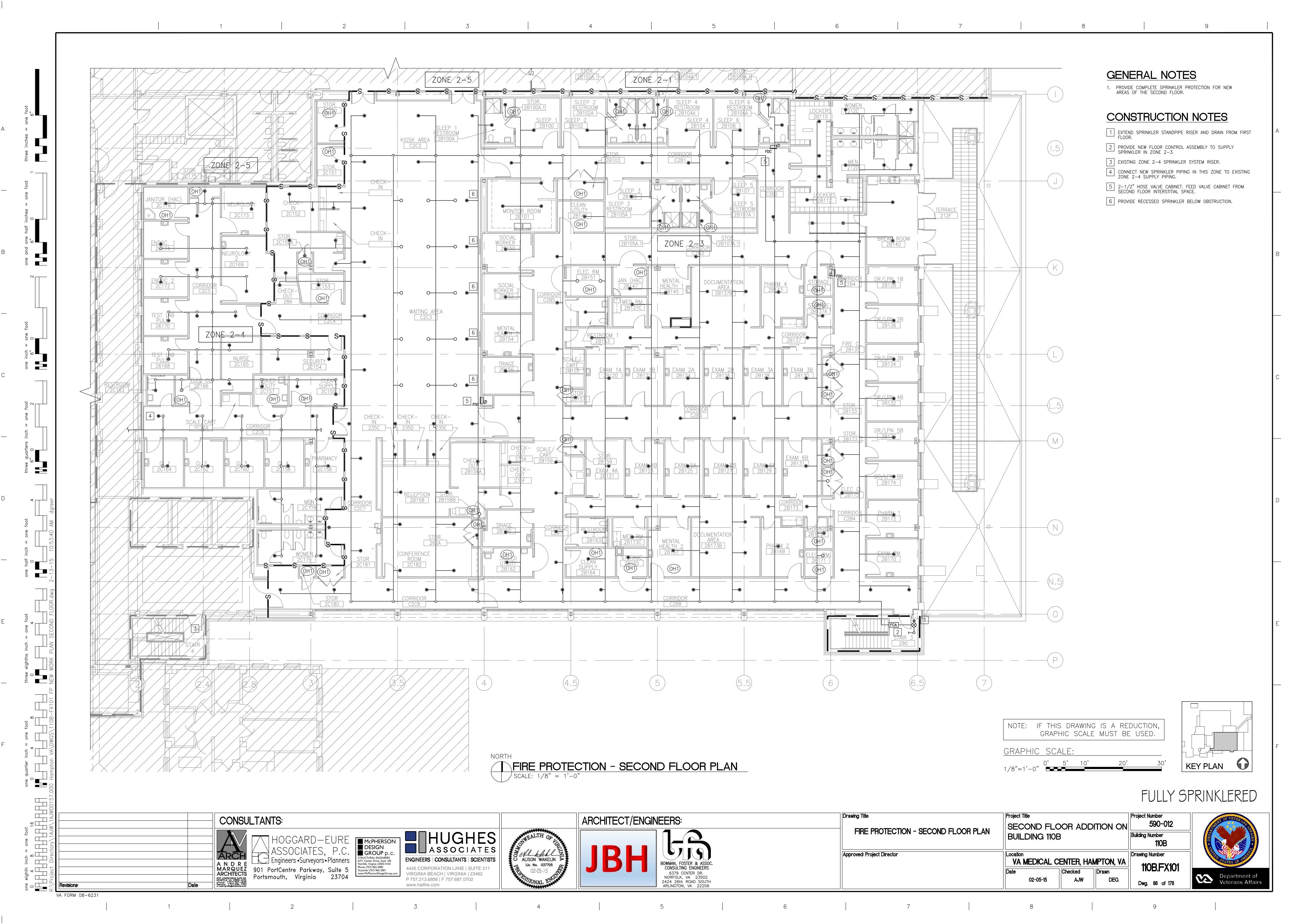
NOTE: REDUCTIONS TO DESIGN PER NFPA 13 FOR QUICK RESPONSE SPRINKLERS MAY BE USED.

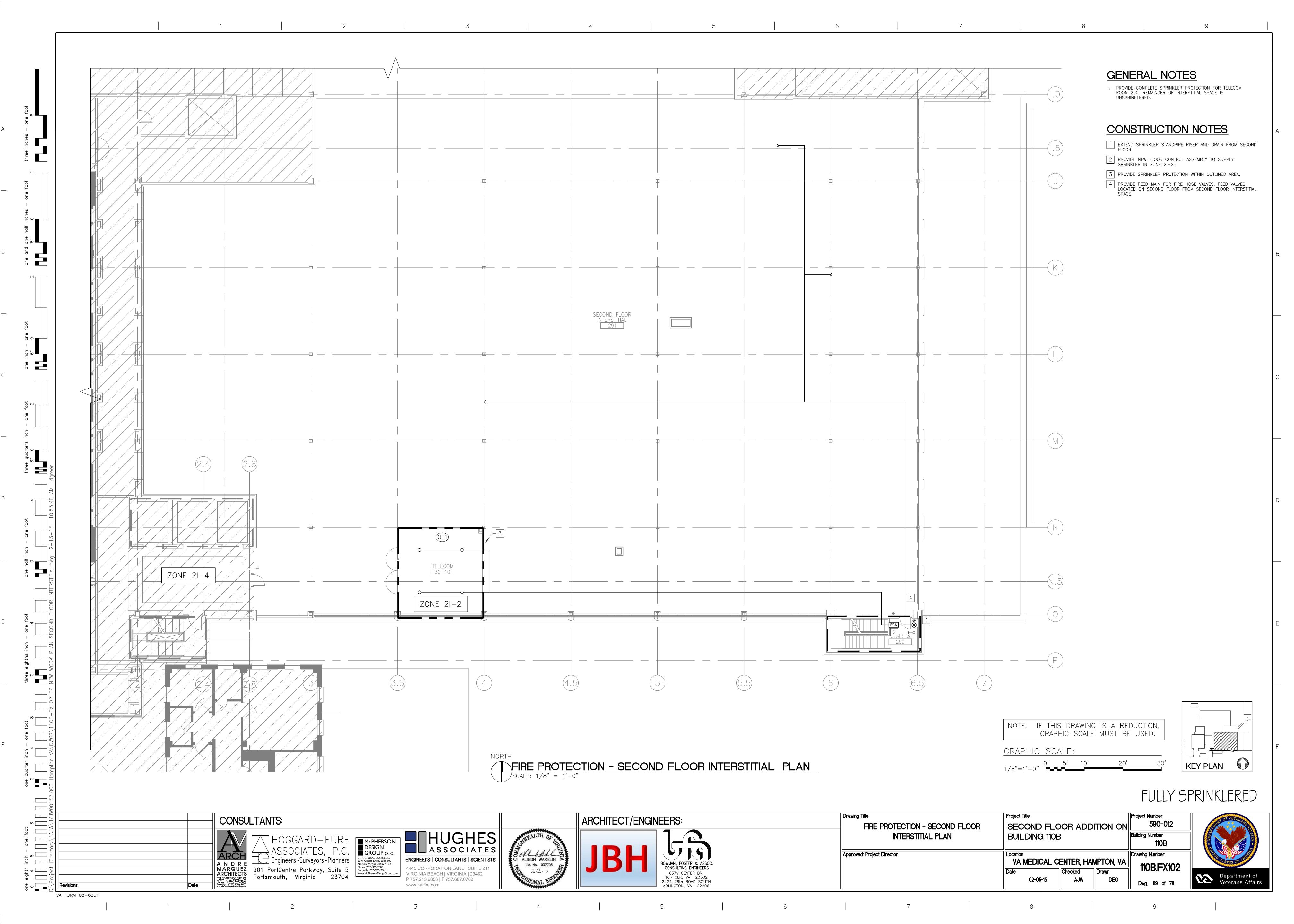


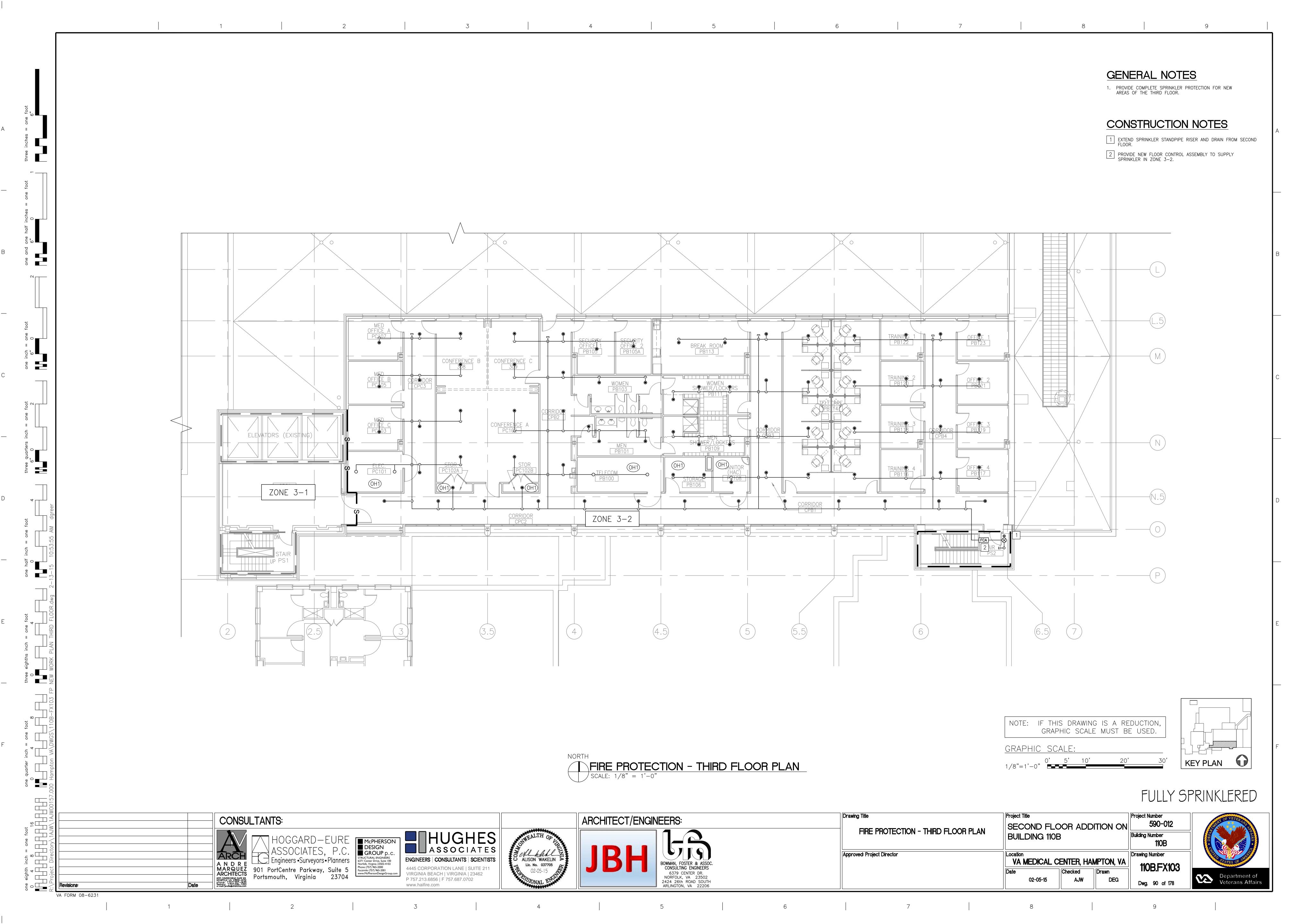
WATER SUPPLY OVERVIEW - FOR INFORMATION ONLY
NO SCALE

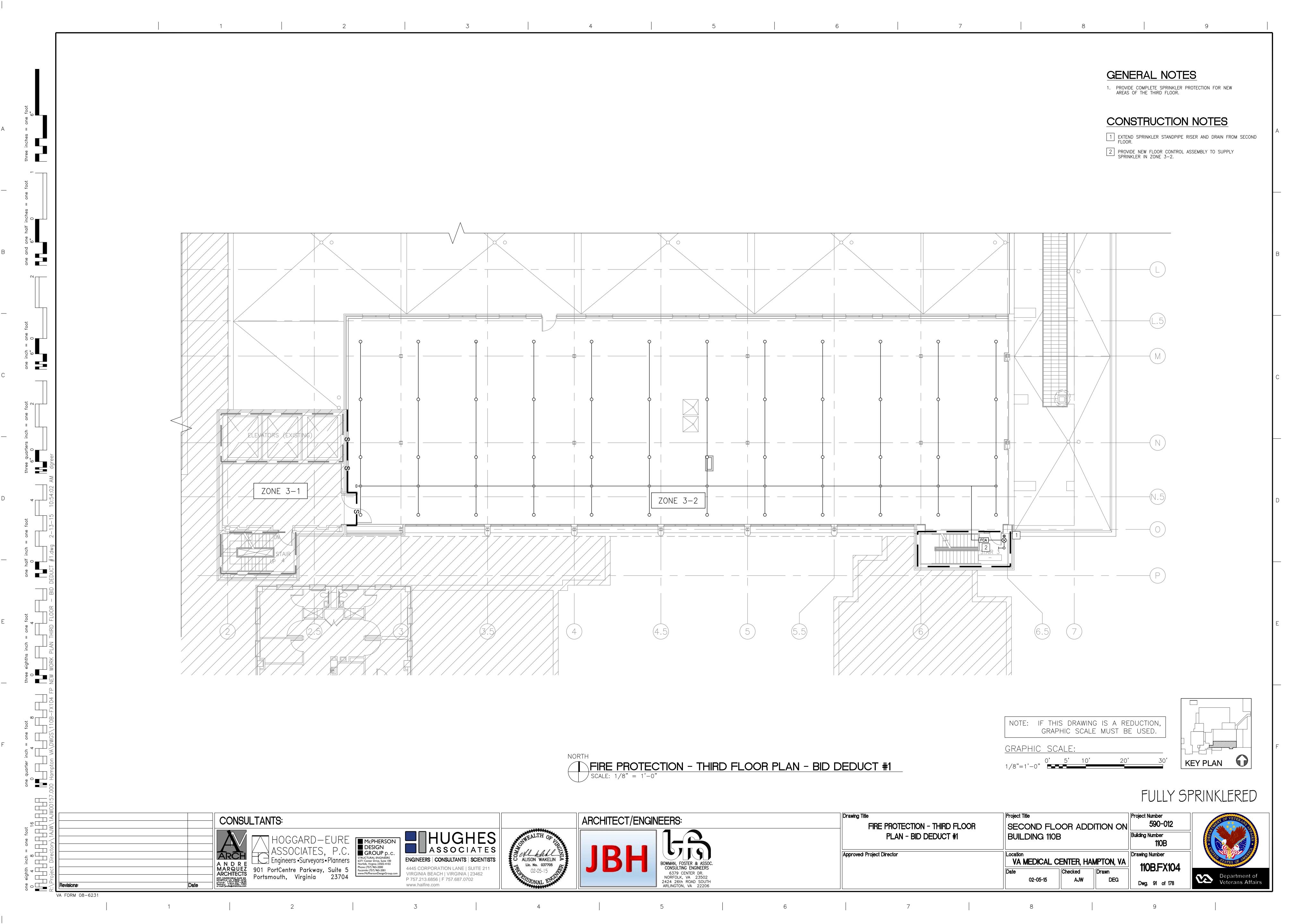
# FULLY SPRINKLERED

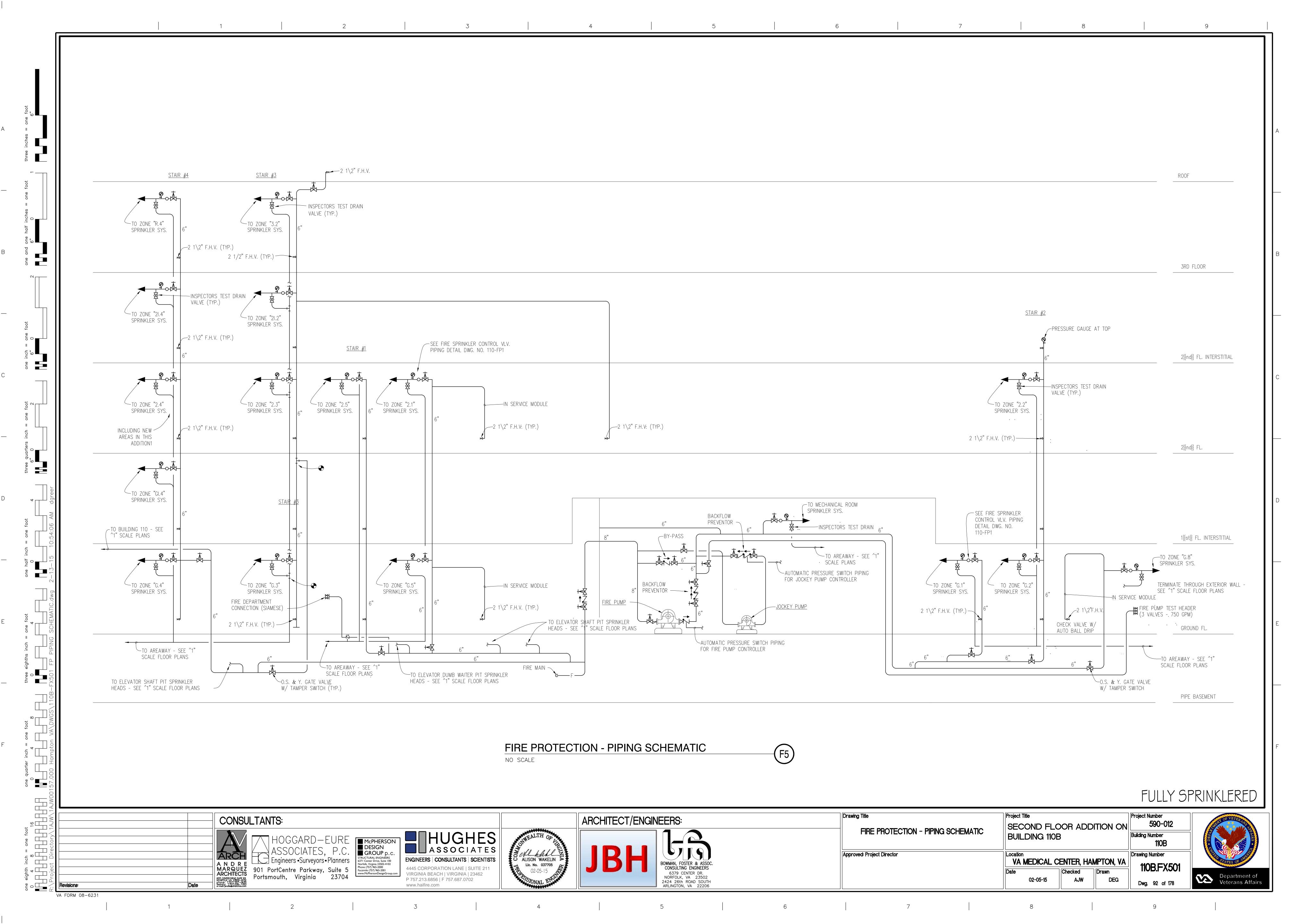
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CONSULTING ENGINEERS
6379 CENTER DR.
NORFOLK, VA 23502
2424 26th ROAD SOUTH
ARLINGTON, VA 22206 Lic. No. 037705 110B.FX001 901 PortCentre Parkway, Suite 5 4445 CORPORATION LANE | SUITE 211 Checked VIRGINIA BEACH | VIRGINIA | 23462 Portsmouth, Virginia Department of Veterans Affairs P 757.213.6856 | F 757.687.0702 DEG AJW Dwg. 87 of 178 www.haifire.com

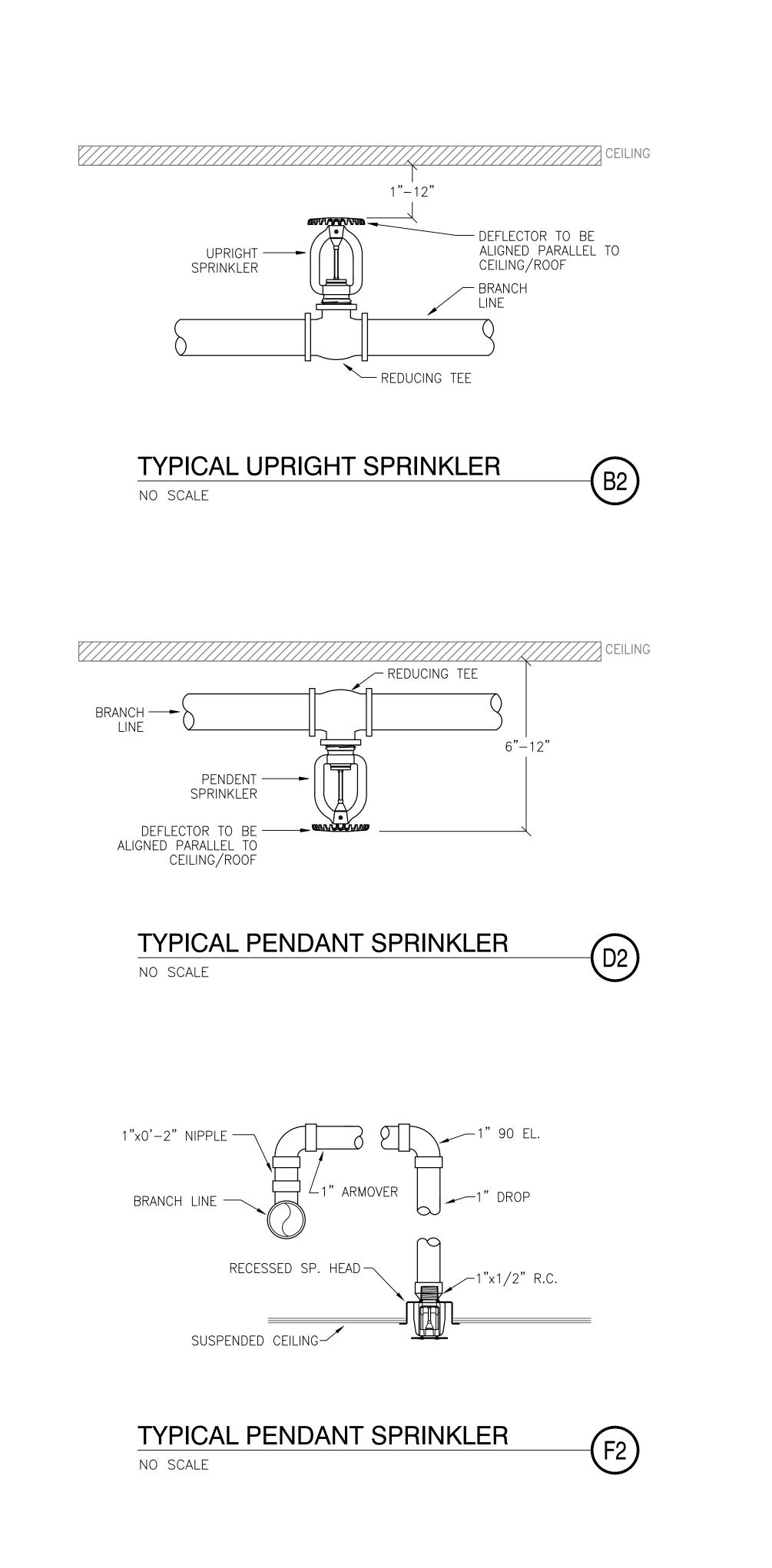


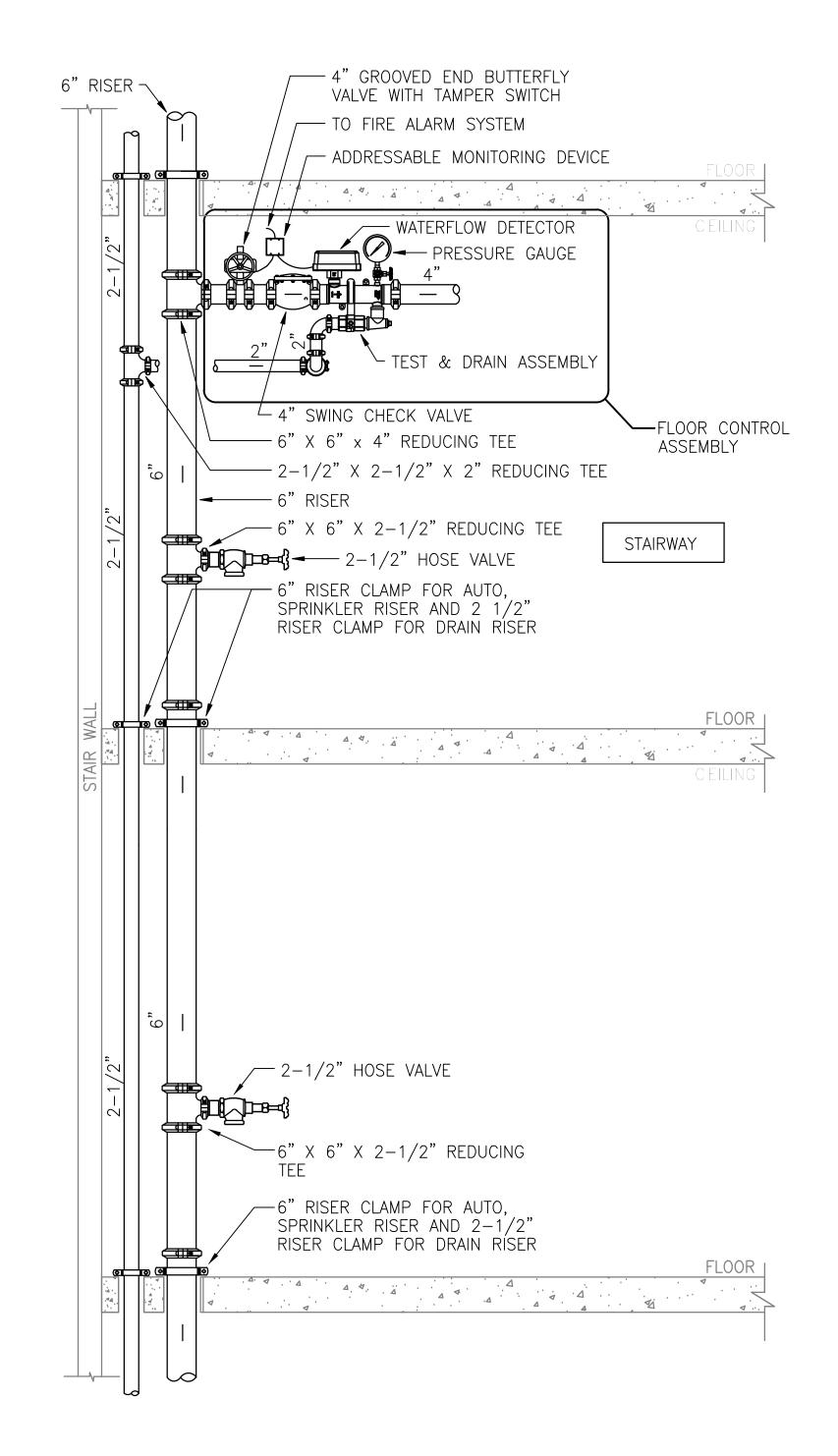












COMBINED SPRINKER/STANDPIPE
RISER WITH FLOOR CONTROL ASSEMBLY
NO SCALE

SQUARE ROD -SPECIAL -COUPLING — ESCUTCHEON PLATES BALL DRIP — CONNECTION — 4" GROOVED END BUTTERFLY VALVE WITH TAMPER SWITCH TO FIRE ALARM SYSTEM — ADDRESSABLE MONITORING DEVICE WATERFLOW DETECTOR PRESSURE GAUGE TEST & DRAIN ASSEMBLY 4" SWING CHECK VALVE -FLOOR CONTROL ----- 6" X 6" x 4" REDUCING TEE ASSEMBLY 2-1/2" X 2-1/2" X 2" REDUCING TEE ← 6" RISER 6" X 6" X 2-1/2" REDUCING TEE STAIRWAY 2-1/2" HOSE VALVE 6" RISER CLAMP FOR AUTO,
SPRINKLER RISER AND 2 1/2"
RISER CLAMP FOR DRAIN RISER TOP OF COMBINED SPRINKLER STANDPIPE RISER

→ HOSE VALVE

CAPPED WRENCH HEAD VALVE CONTROL OR WALL—TYPE INDICATOR POST

NO SCALE

**E**6

SPACING BETWEEN HANGERS (STEEL PIPES)											
NOMINAL PIPE SIZE (in.)	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
SPACING (FT)	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0

HANGER SPACING CHART

NO SCALE

F9

# FULLY SPRINKLERED

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Directo	ASSOCIATES, P.C. STRUCTURAL ENGINEERS GROUP p.C. STRUCTURAL EN	S ALISON WAKELIN A DISTRICT OF THE STATE OF	Approved: Project Director	Location VA MEDICAL CENTER, HAMPTON, VA	A   Promise
	A N D R E MARQUEZ ARCHITECTS STITLED TO STATE OF THE PARKWAY, Suite 5 Portsmouth, Virginia 23704  Portsmouth, Virginia 23704  AN D R E MARQUEZ Phone (757) 965-2000 Facsimile (757) 965-2000 Facsimi	DOWNAN, FOSTER & ASSOC.  CONSULTING ENGINEERS  6379 CENTER DR.  NORFOLK, VA. 23502		Date Checked Drawn	IIUB.FX3U2
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